Approved For Release 2005/11/21 : CIA-RDP79B00314A000600110014-9

American Journal of Public Health and the Nation's Health
December 1966
JPH Volume 56 Number 12

The major medical problems of the Peace Corps have been quite similar to those that might confront a population of a similar age in the United States. What these problems are and how they are handled is the subject of the following paper.

NATIONAL ACADEMY OF SCIENCES
JUN - 7 1967
COMMITTEE ON RESEARCH IN THE LIFE SCIENCES

HEALTH PROBLEMS ENCOUNTERED BY THE PEACE CORPS OVERSEAS

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EARLY in the evolution of the Peace Corps, its director, Mr. Sargent Shriver, recognized the potentially serious health risks involved in placing unacclimated Americans in remote and often unsanitary environments. His concern resulted in a request to the surgeon general of the US Public Health Service to furnish medical support for this new undertaking. The medical operations of the Peace Corps have grown since that time, so that the Medical Program Division is now responsible for the health and medical care of 13,000 Peace Corps volunteers dispersed in 44 countries around the world.

Overseas, there are some 87 Public Health Service medical officers and four nursing officers stationed with the volunteers. This is exclusive of the headquarters staff in Washington, D. C., which is responsible for over-all recruitment, administration, and provision of logistic support to the field staff. In Washington, there are five medical officers, a dental officer, a biostatistician, a nursing adviser, and a health educator. A staff of five psychiatrists from the National Institute of Mental Health provides consultation for the medical officer in the field, in addition to advising other members of the Peace Corps staff on such matters as selection, training, and support.

The typical Peace Corps physician has just completed his internship but is unusual in that he must possess a high degree of maturity, flexibility, and vigor. He is accordingly selected for these qualities. Not only must he be a sound clinician, but in addition, chaplain, counselor, and friend under trying and frustrating circumstances. The mental health component of his activities is a large one, along with preventive medicine in general. These medical officers are, for the most part, recruited from each year's intern class, throughout the country, and they are given an orientation in tropical medicine, counseling, and the administrative procedures of the Peace Corps prior to being sent overseas. Some of them are also given intensive language training courses which are continued in the host country.

In the field, the medical officer divides his time principally between four activities. First, he must conduct a vigorous and continuing preventive medicine program, including immunizations, health education, and specific environmental sanitation measures. He also provides clinical services when required. Second, he is responsible for the preventive

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psychiatry activities in his country or region which are grounded in an active program of counseling and anticipatory guidance. Third, the medical officer in the field is a consultant to the Peace Corps director within his country in regard to the design and execution of health programs for his host country. Finally, the medical officer is encouraged, where possible, and time allowing, to participate in his own volunteer health activity within the host country. This activity may take the form of work in a local clinic or some activity under the sponsorship of the ministry of health.

Health Problems in the Field

What sorts of health problems confront the Peace Corps physician in the field? Certainly tropical medicine and hygiene become more than an academic frill, but they do not dominate the overseas medical practice (the proportion of "exotic diseases"* is about 14 per cent). The most frequently reported causes of morbidity are gastrointestinal pathology followed closely by common respiratory and skin diseases, the single most common diagnosis being the common cold. This general pattern has not changed appreciably since the report of Spence, Cashman, and Gallagher, published in 1963 (Table 1).

These figures are based on morbidity reports submitted monthly by the overseas physicians. Some latitude must be allowed in interpreting rates of all but the most obvious diagnoses (e.g., infectious hepatitis) because the volunteers are widely scattered in any country, and the Peace Corps physician's observation of the more transient or nondisabling conditions is sporadic and unpredictable. Further, although the reporting system was standardized in 1964, and definitions of reportable conditions established, the realities of data-collection at a distance of thousands of miles presents a formidable challenge indeed, and it is difficult to assess the effect of the individual styles of medical administration which must, of necessity, vary from country to country. Nevertheless, the data confirm our clinical impressions of the pattern of morbidity incidence. There are, however, two trends which we consider significant. The first is the rising rate of reported emotional disorders with time. In view of the fact that the rate of premature return for psychiatric reasons has remained essentially constant during the life of the Peace Corps, and the fact that our new reporting system stresses the reporting of such problems, we are inclined to the view that what we are observing is an increase in reporting rather than an increase in psychiatric morbidity. The resolution of this question will depend on the accumu-

Table 1—Incidence rates of specified illness, Peace Corps, worldwide, 1962, 1964, 1965

(cases per 1,000 volunteers per year)

Diagnosis	1962	1964	1965 (Jan.-June)
Dysentery	181	276	210
Parasitic diseases	106	121	83
Gastroenteritis	377	163	139
Upper respiratory infections	328	220	190
Influenza	63	46	47
Dermatophytosis	83	92	60
Skin diseases	163	167	160
Injury	127	195	190
All other	527	743	958
Total	1,955	2,024	1,958
Amebiasis	59	117	84
Infectious hepatitis	16	21	7
Emotional disorders	27	40	67

Diagnostic categories are constructed according to the International Classification of Diseases. Adapted, PHS Publ. No. 719 (Dec.), 1962.

* i.e., the proportion of reported illnesses listed in a tropical medicine text.

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lation of more data over longer periods of time for greater numbers of volunteers.

The second trend which we consider especially important is the decrease in the incidence of infectious hepatitis. This rate is now about half what it was. The drop in incidence has occurred since the introduction of the use of immune serum globulin as a prophylactic measure against this disease. In this case, it appears that the frequency of this relatively easily recognized disease has halved as the result of a specific measure directed against it. The regimen employed is to give intramuscularly immune serum globulin in dose of 0.05 ml per pound body weight at intervals of six months.

The program of preventive measures actually begins before the volunteers go overseas. All appropriate immunizations available are administered at the training site, in accordance with instructions outlined in the current edition of Immunization Information for International Travel, prepared by the US Public Health Service. These immunizations are entered on International Certificate of Vaccination Form PHS-731, which must accompany all international travelers. Because of the large number of inoculations, a schedule has been developed according to Table 2.

Rabies constitutes a major potential threat to the Peace Corps volunteers in the field. Their rate of exposure to animal bites is 3,120 bites per 100,000 volunteers per year or about ten times the rate reported for the United States. The animal population overseas is largely uncontrolled. Because distance and communication with physician and medical facilities present an obstacle and the volunteer may delay reporting contact with a rabid animal for a week or more, a dangerous situation is created. It is because of this situation that a program of preexposure immunoprophylaxis against rabies was instituted.

A series of three 1 cc inoculations with standard duck embryo rabies vaccine is utilized. The initial inoculum is given, followed in three weeks by a second, and finally a third at three to six

Table 2—Training site immunization schedule

Immunizations	Dosage	Weeks of Training									
		1	2	3	4	5	6	7	8	9	10
Smallpox	1		X								
Typhoid and paratyphoid	3	X		X		X					
Diphtheria-tetanus	2	X				X					
Polio											
Salk	2	X				X					
Sabin		Contingent upon Valence									
Yellow fever	1			X							
Influenza	2		X					X			
Typhus	2		X	X							
Cholera	2							X	X		
Plague	2							X	X		
Rabies (duck embryo)		X				X					
Immune serum globulin	1	Last week of training									
Histoplasmin skin test		At end of training									
Tuberculin skin test		At end of training									

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months. If a volunteer is exposed to rabies, then the standard course of treatment with vaccine is administered. The initial series permits rapid antibody anamnesis and a high titer. This is particularly valuable when there is a delay in reporting exposure.

Dental problems are very widespread in the Peace Corps, and dental caries is the most prevalent disease of this group. Not only do Peace Corps volunteers fall within an age group of high dental caries susceptibility, but there is also a diminution in the intensity of oral hygiene practices. For example, the practice of tooth-brushing may be curtailed for the want of a clean and readily available water supply. This is further aggravated by a high carbohydrate diet. It is often easier to obtain a soft drink containing sugar than to obtain a quantity of boiled water for drinking. In some areas, volunteers increase their intake of candy because of the convenience of this food source. These factors of age, diet, and reduction in oral hygiene, along with the inconsistency of dental treatment facilities overseas, make dentistry one of the most complicated facets of our medical responsibility.

The problem of exotic and tropical disease does constitute a constant potential hazard. The most frequent single tropical medical problem has been amebiasis. The symptomatic infestation rate is on the order of 84 per 1,000 volunteers per year at the present time. A variety of other intestinal parasites are also encountered, but with few exceptions have not caused serious illness. There have been cases of malaria, schistosomiasis, trypanosomiasis, and filariasis; however, these diseases have not been the major problem that was anticipated in the early days of the Peace Corps. They have presented a challenge in preventive medicine and tropical hygiene and have stimulated a continuing round of prophylaxis, reinforcement of health education, and environmental sanitation. In summary, the major medical problems have been very much the same as might confront a similar age group population in the United States. The principal cause of death has been accidents and the death rate from all causes among the volunteers is the same as the comparable age group in the United States, i.e., 1.2 per 1,000 per year.

Perhaps the relatively optimistic prospects for continuing good health in the Peace Corps can be attributed to the selection and training process which volunteers undergo. The volunteers are rigorously selected as to motivation, psychological maturity, and physical fitness. The Medical Program Division plays a salient role in the selection process. Physical standards are high and follow closely the physical standards of Selective Service. There is more flexibility in the Peace Corps, however, and a concerted effort is made to place handicapped persons in a suitable environment where they can be effective at minimal risk and yet obtain necessary medical support.

The Psychiatric Branch, together with psychiatric consultants at the university training sites, is active in both the selection and mental health training of volunteers. This selection and training process helps to place overseas a psychologically sound individual who has a keen awareness of the importance of mental hygiene and is prepared to cope with frustration and isolation while undergoing a process of maturation. The benefits of this approach are attested to in the low number of volunteers who return before completing two years of service. The annual premature return rate for psychiatric reasons is 0.7 per cent.

Health Training

Health training is an important part of preparation for overseas living. Some

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30 hours are devoted to health training during the 12 weeks at the training site. The principal emphasis is on giving the volunteer some insight into basic health skills and the provision of some technics which the volunteer can employ in the host country in carrying out his program. Thus the teacher may influence health attitudes and behavior, while carrying out his primary teaching responsibility. The volunteer acquires a fundamental understanding of the hazards confronting him and of how, by disciplined personal hygiene, they may be circumvented. Careful attention is given to the cultural situation in which the volunteer must operate, as this has a profound influence upon his behavior. Overseas the Peace Corps physician continues the health education process begun at the training site, reinforcing personal health discipline.

In spite of preventive medicine and personal hygiene, volunteers do become ill. They may be hospitalized in a local hospital selected by the Peace Corps physician or evacuated to the nearest United States government medical facility. This is very often a military hospital. Volunteers are also evacuated directly to the United States to US Public Health Service Hospitals or other medical facilities. Those volunteers who are terminated for medical reasons then become the responsibility of the Federal Bureau of Employees Compensation, with the Public Health Service usually continuing their clinical management. Most volunteers complete their service uneventfully and in good health. Upon completion of service, they are given a termination physical examination overseas. This examination is particularly concerned with discovering any asymptomatic parasitic infestation, as well as the usual other criteria for a clean bill of health.

Our experience has proved to be both challenging and rewarding, and has provided our physicians with an insight into public health which would be virtually impossible of attainment in such a short time in almost any other setting.

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This paper was presented before a Joint Session of the Industrial Medical Association and the Occupational Health Section of the American Public Health Association at the Ninety-Third Annual Meeting in Chicago, Ill., October 19, 1965.

Approved For Release 2005/11/21 : CIA-RDP79B00314A000600110014-9